CLAIMS

1. A reactive fine particle; comprising
   a. one or more functional compounds A or its precursors having a maximal size of less than 2 microns; adapted for synthesis, modification, curing, cross-linking, secession and/or initiating of polymerization of polymers, and
   b. one or more inert particles B having a least the maximal size of 2 microns carrying said functional compounds A at the outer surface and/or in its inner portion;

   wherein said compounds A to inert particles B weight ratio is ranging from 0.01A:100B to 50A:100B.

2. The reactive fine particle according to claim 1 adapted for curing thermosetic polymers; wherein at least a portion of the functional compounds are curing agents or latent curing agents adapted to initiate cross linking and/or polymerization said thermoset polymers.

3. A liquid thermosetting compound adapted to be cured by the curing agents as defined in claim 2, comprising reactive fine particles A, inert particles B and compounds selected from thermosetting resins, thermoplastic resins, nano-particles, wetting agents, reactive diluents, impact modifiers, flexibilizers, heat stabilizers, surface tension modifiers, adhesion promoter, flame retardants, matting agents, rheology modifiers, dispersants or any combination thereof.

4. The liquid thermosetting compound according to claim 3, adapted for applications in microelectronic devices manufacturing selected from dielectrics, resistors, optical waveguides, conductive modules, capacitance layers, adhesives, protective coatings, encapsulants or any combination thereof.

5. The liquid thermosetting compound according to claim 4 for ink jet inks and/or ink jet printers; characterized by a viscosity lower 50 Cp at application temperature, surface tension lower 80 dyn/cm at application temperature, and glass transition temperature of cured ink of greater than 120°C.

6. The liquid thermosetting according to claim 4, adapted to protect, mark, seal, encapsulate, define, and/or insulate electronic circuits from their environment and/or form aggressive media.

7. The liquid thermosetting according to claim 6, adapted to bond electronic, electric, optic and/or electro optic devices.

8. The liquid thermosetting according to claim 6, adapted to mark and notate features on the outer layers of PCB and/or the surface of discrete compounds.

9. The liquid thermosetting according to claim 6, adapted to define the feature of capacitors, resistors nd/or conductors on a PCB layer.

10. A method for producing reactive fine particles as defined in claim 1, comprising *inter alia* the steps of:

    a. dissolving one or more functional compounds A or its precursors having a maximal size lower 2 microns in a solvent to form a clear solution;
    b. admixing one or more inert particles B having a maximal size lower 2 microns with the solution obtained above to form a homogenized dispersion;
    c. precipitating said functional compounds as a layer or in the form of small crystals onto and/or into the surface of said inert particles;
    d. evaporating said solvent;
    e. drying or concentrating the same;

    in the manner that reactive fine particles comprising said compounds A and inert particles B in a weight ratio which is ranging from 0.01A:100B to 50A:100B is obtained.

11. The method according to claim 10, wherein deposition of the functional compounds A onto the inert particles B is provided by means selected from introducing of at least one another solvent to the said admixture; changing the temperature; pH shifting; altering electrolytes concentration, spraying agent solution on filler particles, or any combination thereof.

12. The method according to claim 10, additionally comprising the step of stabilizing the obtained slurry by means of admixing a sufficient measure of dispersing agents and/or rheology modifiers.

13. The method according to claim 10, wherein at least a portion of the precursors of the functional compounds A are admixed with the inert particles B at the reaction medium.

14. A method for producing reactive fine particles, wherein the inert particles B are coated in at least a significant portion of their surface with functional compounds A; said method comprising *inter alia* the steps of
    a. admixing at least one functional compound or its precursors in a solvent to form a clear solution;
    b. spraying the same towards particles of the inert filler, having maximal particle size of 2 microns; and then,
    c. removing said solvent, in the manner that reactive fine particles comprising dried inert particles coated by functional compounds is obtained.

15. The method according to claim 14, wherein the reactive fine particles obtained comprising homogeneous or heterogeneous functional compounds compositions.

16. The method according to claim 14, wherein the reactive fine particles obtained are characterized by monolayers or multilayers of functional compounds.